What is claimed is:

1. A electronic circuit apparatus comprising:

at least two wiring circuit boards each of which is mounted with at least two electronic components;

a heat sink on which said wiring circuit boards are fixed, said heat sink having a higher heat conductivity than that of said wiring circuit boards;

an external connection terminal electrically connected to said wiring circuit boards; and

a thermosetting resin composition with which the entire surfaces of said wiring circuit boards, a part of said heat sink and a part of said external connection terminal are integrally molded, wherein:

said wiring circuit boards on which all necessary electronic components are mounted in advance are fixed to the top and bottom of said heat sink via an adhesive layer.

2. The electronic circuit apparatus according to claim 1, wherein all of the electronic components mounted on one of said wiring circuit board are mounted by bonding bare chip components with a wire, and wherein all of the electronic components mounted on the other wiring circuit board are mounted by soldering.

3. The electronic circuit apparatus according to claim 1, wherein a wire bonding between said electronic components and said wiring circuit boards, a wire bonding between said wiring circuit boards, and a wire bonding between said wiring circuit boards and said external connection terminal are effected only towards one side of said heat sink.

4. A method of manufacturing an electronic circuit apparatus comprising the steps of:

fixing at least two wiring circuit boards each of which is mounted with at

least two electronic components to a heat sink having a higher heat conductivity than that of said wiring circuit boards;

electrically connecting an external connection terminal with said wiring circuit boards;

integrally molding the entire surfaces of said wiring circuit boards, a part of said heat sink and a part of said external connection terminal with a thermosetting resin composition, said method further comprising the step of:

fixing said wiring circuit boards on which said electronic components are mounted to the top and bottom of said heat sink via an adhesive layer.

5. The method of manufacturing an electronic circuit apparatus according to claim 4, wherein a wire bonding between said wiring circuit boards and a wire bonding between said wiring circuit boards and said external connection terminal are effected only towards one side of said heat sink.

6. An electronic circuit apparatus comprising:

a wiring circuit board on which at least two electronic components are mounted;

a heat sink to which said wiring circuit board is fixed, said heat sink having a higher heat conductivity than that of said wiring circuit board;

an external connection terminal electrically connected to said wiring circuit board; and

a thermosetting resin composition with which the entire surface of said wiring circuit board, at least a part of said heat sink and a part of said external connection terminal are integrally molded, wherein:

a part of a passage for circulating a cooling medium is formed in an external layer of said electronic circuit apparatus.

7. The electronic circuit apparatus according to claim 1, wherein a part of a

passage for circulating a cooling medium is formed in an external layer of said electronic circuit apparatus.

8. A structure for mounting said electronic circuit apparatus of claim 6, wherein said electronic circuit apparatus is fixed on the interior of an automatic transmission assembly of an automobile, and wherein said cooling medium is a transmission fluid.

9. A structure for mounting said electronic circuit apparatus of claim 6, wherein said electronic circuit apparatus is fixed on the interior of an engine compartment of an automobile, and wherein said cooling medium is an engine cooling water.

10. A structure for mounting said electronic circuit apparatus of claim 6, wherein said electronic circuit apparatus is fixed on the interior of an engine intake pipe of an automobile, and wherein said cooling medium is the air that passes in said engine intake pipe.

11. A structure for mounting said electronic circuit apparatus of claim 6, wherein at least two electronic circuit apparatuses are stacked on top of each other, and wherein said cooling medium is circulated in the stacked electronic circuit apparatuses.

12. The electronic circuit apparatus according to claim 1, wherein said adhesive layer is formed by a two color printing process employing a heat-conducting paste containing a highly heat-conductive metal particle and/or a metal oxide particle, and an insulating organic paste, and wherein said heat-conductive paste is disposed immediately below where a bare silicon chip is mounted on said wiring circuit boards.

13. The electronic circuit apparatus according to claim 1, wherein said heat sink is made of a metal compound with electrical conductivity, and wherein said adhesive layer is formed by an insulating organic paste.

14. The electronic circuit apparatus according to claim 13, wherein said heat sink is made of a clad material containing a copper alloy or copper.

15. The electronic circuit apparatus according to claim 13, wherein said adhesive layer is made of a thermosetting resin composition containing an epoxy resin and an inorganic filler.

16. The electronic circuit apparatus according to claim 1, wherein at least one of said wiring circuit boards is a ceramic substrate.

17. The electronic circuit apparatus according to claim 1, wherein at least one of said wiring circuit boards is a flexible polyimide wiring circuit board.